REMARKS

The Specification has been amended to improve the reading of the related art section of the disclosure.

Claim 1 has been amended to clarify subject matter and also to include the elements of Claims 2, 3, and 4. Claims 2-4 have been canceled, and Claims 6-11 have been canceled as depending from the canceled claims. Claim 12 has been amended to clarify subject matter and also to include the elements of Claims 13, 14, and 15. Claims 13-15 have been canceled. Claim 16 has been amended to depend from Claim 12 as a result of canceling Claim 15. Claims 22 and 23 have been added. Support can be found at page 10, line 20, for example.

No new matter has been added. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Specification

The disclosure has been objected to because the patent/document/publication numbers are listed at the end of the related art section. As the Examiner suggested, the specification has been amended to improve the reading of the related art section, thereby obviating this objection.

Rejections of Claims 1-21 Under 35 U.S.C. § 112

Claims 1-21 have been rejected under 35 U.S.C. § 112, second paragraph, because in Claim 1, the link between the different monomers is not clearly defined, and the recitation of the group(s) is an improper Markush grouping; and in Claims 1 and 12, it is unclear if the quaternization is done to the copolymer or monomer (b). Claim 1 has been amended to clarify the link, the recitation of the group(s), and the quaternization. Claim 12 has been also amended to clarify the quaternization. Applicants believe that Claims 1 and 12 as amended herein particularly point out and distinctly claim the subject matter, and request withdrawal of the rejection.

Rejection of Claims 1, 5, 12, and 17 Under 35 U.S.C. § 102

Claims 1, 5, 12, and 17 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Koji et al (JP 11-323774) or Yuji et al (JP 2000-064193) or Noriaki (JP 06-240598).

Claim 1 has been amended to include the elements of Claims 2-4 which are not rejected on this ground, and at least for this reason, Claim 1 cannot be anticipated by Koji et al, Yuji et al, or

Noriaki. The patentability of Claim 1 as amended is discussed below. Claim 12 has been amended to include the elements of Claims 13-15 which are not rejected on this ground, and at least for this reason, Claim 12 cannot be anticipated by Koji et al, Yuji et al, or Noriaki. The patentability of Claim 12 as amended is discussed below. Claims 5 and 17 also cannot be anticipated by the above reference at least due to their dependencies from Claim 1 or 12.

Applicants respectfully request withdrawal of the rejection.

Rejection of Claims 2-4, 6-11, 13-16, and 18-21 Under 35 U.S.C. § 103

Claims 2-4, 6-11, 13-16, and 18-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Koji et al or Yuji et al or Noriaki.

The Examiner asserts: "optimizing the degree of cationization and the particle size of an emulsion is within the levels of ordinary skill in the art and obvious absent a showing of unexpected results." *Office Action* p. 6. Applicants respectfully assert that the claimed invention as defined in Claims 1 and 12 as amended herein produce unexpected results as discussed below, and therefore, is patentable over Koji et al or Yuji et al or Noriaki.

The claimed invention as defined in Claims 1 and 12 solves at least the following problems:

> In response to the quality requirements for newsprint paper, such as a higher whiteness level and improved clearness in color printing, so-called neutral papermaking has recently become a major trend, in which base paper for newsprint is manufactured at a pH in the range from neutral to weak alkaline. Due to this transition to neutral papermaking, the addition ratio of aluminum sulfate in newsprint production is reduced so that the effect (provision of water absorption resistance) of a surface sizing agent conventionally used in newsprint base paper produced in acidic papermaking (hereinafter referred to as acidic newsprint base paper) tends to be reduced. ... However, also in base paper for newsprint having a low aluminum sulfate addition ratio, particularly in base paper for newsprint produced by a neutral papermaking process (hereinafter referred to as neutral newsprint base paper), the abovementioned alignment of the surface sizing agent is not as complete as in acidic newsprint base paper, which results in a huge decrease in water absorption resistance when compared to the case where the same amount of the abovementioned surface sizing agent is used for coating.

Specification at page 2, line 25 to page 3, line 19. In the claimed invention as defined in Claims 1 and 12, although base paper for newsprint has a low aluminum sulfate addition ratio, water absorption resistance becomes significantly high by using a specific sizing composition. Table 1 on page 26 illustrates such unexpected results as shown in a reproduced Table 1 below:

	Surface sizing agent preparing conditions				Surface sizing agent		Base paper	Treating agent, amount of coating (g/m^2)	Droplet water absorption degree (seconds)
	Mixing ratio				Cationization degree	Average particle diameter			
	a	b	c	d	meq/g	nm			
Example 1	80	20		Equimolar to (b)	**1.3**	46	**A**	0.50	30
2	80	20			**1.3**	43	**A**	0.50	35
3	60	30	10		**1.5**	**33**	**A**	0.49	**60**
4	60	30	10	Equimolar to (b)	**1.7**	**32**	**A**	0.48	**103**
5	60	30	10	Equimolar to (b)	**1.7**	**32**	**B**	0.48	**95**
Comparative Example 1	95	5			0.5	130	**A**	0.55	11
2	85	5	10		0.5	152	**A**	0.50	10
3	80	20		Equimolar to (b)	1.1	184	**A**	0.52	9
4	80	20			1.0	175	**A**	0.48	9
5	80	20			1.0	173	**A**	0.49	7
6					-1.2	**20**	**A**	0.48	9
7	60	30	10	Equimolar to (b)	**1.7**	**32**	C	0.49	15

Base paper A contains aluminum sulfate at 1.5%
Base paper B contains aluminum sulfate at 2.0%
Base paper C contains aluminum sulfate at 3.5%

Table 1 illustrates that if the specific surface sizing agent does not have the components as defined in Claims 1 and 12, water absorption resistance is poor (Comparative Example 6); even if the specific surface sizing agent has the components as defined in Claims 1 and 12, if the following criteria as defined in Claims 1 and 12 are not satisfied, water absorption resistance is poor (Examples 1-2, Comparative Examples 1-5 and 7), whereas the following criteria are satisfied, water absorption resistance is significantly high (Examples 3-5). It is surprising that the newprint paper having a low aluminum sulfate addition rate has such high water absorption resistance.

1) the cationization degree of the water-soluble surface sizing agent is 1.3-3.0 meq/g;
2) the average particle size of the water-soluble surface sizing agent is 40 nm or smaller; and
3) aluminum sulfate is added at a ratio of less than 3.0% by weight relative to oven-dried pulp when manufacturing the base paper for newsprint.

Examples 1 and 2 satisfy criteria 1) and 3) and show much better water absorption resistance as compared with Comparative Examples 1-5 and 7; however, in Examples 1-2, the surface sizing agent has an average particle size of more than 40 nm, water absorption resistance is not excellent. Comparative Example 7 satisfies criteria 1) and 2), but the base paper has an aluminum sulfate addition ratio of over 3.0%, water absorption resistance is significantly poor.

In view of the above, the claimed invention as defined in Claims 1 and 12 as amended herein produces unexpected results based on Applicants' examples commensurate with the scope of Claims 1 and 12. None of the references teach the above features in any predictable manner. Yuji et al and Noriaki require zirconium in the surface sizing agent, and Table 3 of Noriaki (wherein zirconium is not used in each sample and gate roll coating is used) shows that without zirconium, water absorption resistant is very low as compared with Table 1 of Noriaki (wherein zirconium is used in each sample and gate roll coating is used). In Noriaki, when size press coating is used (Examples 9-16, Comparative Examples 1-9), even if zirconium is not used, sizing effect compatible with that obtained with zirconium can be obtained (Comparative Examples 5 and 6). In Koji et al, no zirconium is used, but cationized starch is essential. There is no support in Koji et al, Yuji et al, and Noriaki for the proposition that the cationization degree and the average particle size of the water-soluble surface sizing agent are result effective variables for water absorption resistance of a base paper having an aluminum sulfate addition of less than 3.0%.

Further, the Examiner asserts: "it has been held that it is obvious to try, choosing from a finite number of identified, predictable solutions with a reasonable expectation of success. See recent Board decision *Ex parte Smith,* --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (Citing KSR, 82 USPQ2d at 1396)." *Office Action* p. 6. Applicants respectfully disagree.

Note that this is not the situation, as in *KSR*, where there are only a limited number of available options, each of which can be considered "obvious to try." Rather, there are thousands, if not millions, of different material options for the recited apparatus, with no guidance in the prior art of record to lead one of skill in the art to use the recited glassy carbon. As recently stated by the Federal Circuit:

> First, KSR assumes a starting reference point or points in the art, prior to the time of the invention, from which a skilled artisan might identify a problem and pursue

> potential solutions. Second, KSR presupposes that the record up to the time of invention would give some reasons, available within the knowledge of one of skill in the art, to make particular modifications to achieve the claimed compound.... Thus, the Supreme Court's analysis in KSR presumes that the record before the time of invention would supply some reasons for narrowing the prior art universe to a 'finite number of identified, predictable solutions.'

Eisai Co. Ltd. v. Dr. Reddy's Laboratories,Ltd., 87 USPQ.2d 1452, 1457, 533 F3d 1353 (Fed. Cir. 2008). As in *Eisai*, in the present case there is no identified problem in the prior art which would lead to the claimed combination, and there is more than "a finite number of identified, predictable solutions."

In view of the foregoing, the claimed invention as defined in Claims 1 and 12 as amended herein could not be *prima facie* obvious over Koji et al, Yuji et al, and Noriaki. Claims 2-4, 6-11, 13-16, and 18-21 also could not be obvious at least due to their dependencies from Claim 1 or 12, in addition to the other distinguishing features recited therein.

Applicants respectfully request withdrawal of the rejection.

New Claims

Claims 22 and 23 have been added. These claims are patentable at least due to their dependencies from Claims 1 and 12, respectively, in addition to their distinguishing features.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. The grounds for rejection which are not discussed herein are moot and Applicants expressly do not acquiesce in the findings not separately addressed. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

No Disclaimers or Disavowals

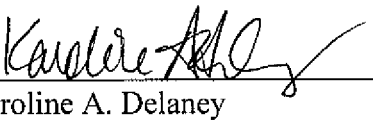
Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather,

any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 10, 2009 By: 

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